

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

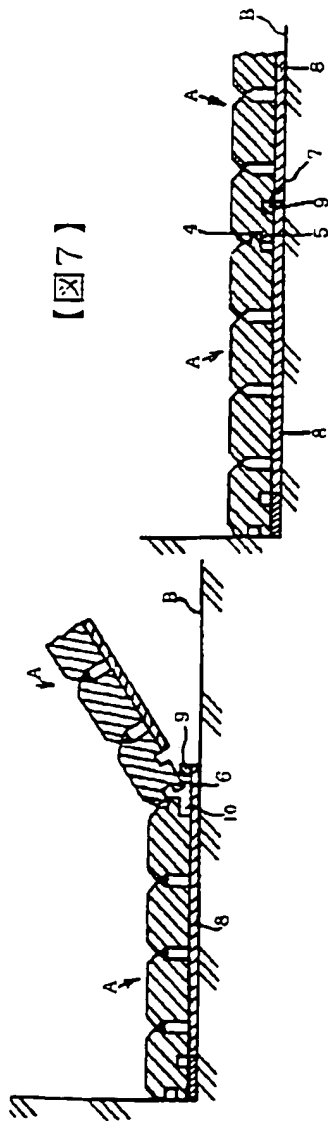
Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

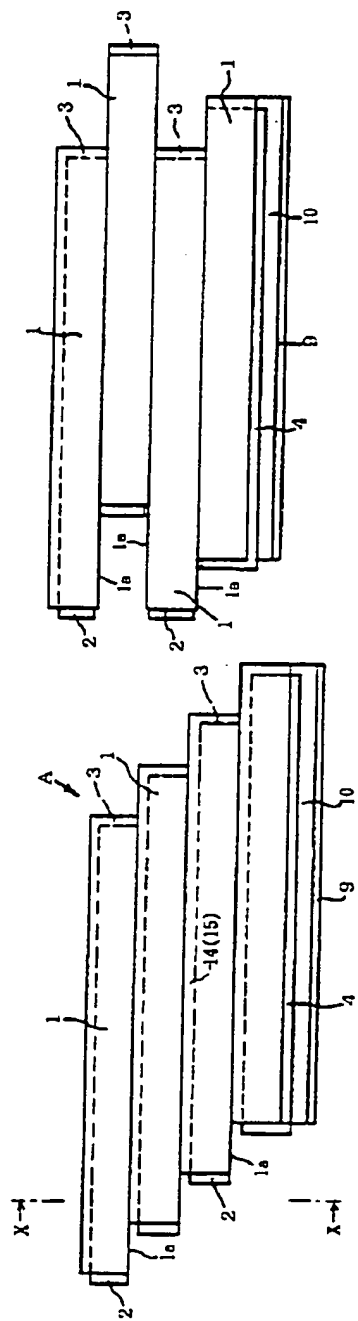
**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problems Mailbox.**





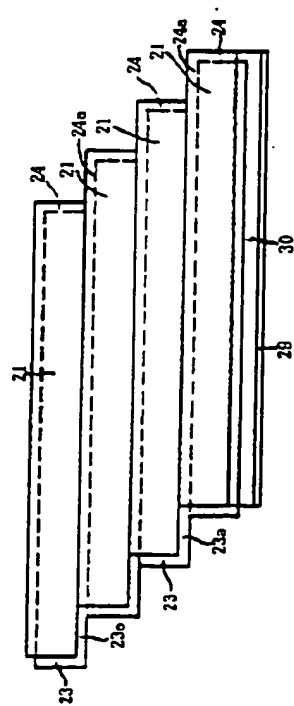
【図7】

【図8】



【図10】

【図13】



**English translation of  
the Japanese patent application  
nr. 7-76923**

Japanese Unexamined Patent Publication No. 7-76923

Publication Date: March 20, 1995

Application No.: 5-186878

Application Date: June 29, 1993

Inventor: Aoki

Applicant: Daiken Co., Ltd.

Title of the Invention: FLOOR MATERIAL

[Abstract]

[Object] To enable the task of joining floor material formed as a plane en echelon in a stepped form at both edges thereof to be performed easily even in tight spaces.

[Configuration] A main floor material piece A is formed by multiple rectangular boards 1 being integrally joined at the long sides thereof at offset in the length direction so as to form stepped joining planes at the edge portions thereof, wherein at one edge plane side, a tongue 2 is formed only to the sort side portion of each board 1 and a groove 3 to which the tongue 2 can fit is formed to the other edge plane side thereof, and wherein the tongue-and-groove 2 and 3 can be fit by abutting in a downward inclined manner the tongue 2 of the floor material to be laid against the groove 3 of the floor material already laid, following which the floor material is laid on the sub-floor.

[Claims]

1. A main floor material piece, comprising a plurality of rectangular boards integrally formed with the opposing side edge planes at the long sides thereof joined and with the adjacent boards being offset in a step formation in the longitudinal direction, wherein a fitting groove of a constant width is continuously provided opening upwards so as to form an outward edge wall below the side edge surface at one side edge plane of the both side edge planes of the parallel long sides of said main floor material into the form of a retaining protrusion, and a fitting protrusion portion and a retaining groove facing downwards to which said fitting groove and retaining protrusion can each fit, and wherein a tongue is provided to one short side edge plane of said rectangular boards and a groove capable of fitting with said tongue is formed at the other short side edge plane, and wherein at one side edge portion of the long side of an adjacent rectangular board which is exposed by the stepped array, a corner portion connecting with at least said tongue portion at right angles is formed as a side edge plane to which said tongue is not provided.

[Detailed Description of the Invention]

[0001]

[Industrial Field of the Invention]      The present invention relates to improving floor material wherein both edge sides

are formed in a step formation.

[0002]

[Description of the Related Art]

Floor material such as shown in Fig. 13 and Fig. 14 wherein multiple rectangular boards 21 are combined in echelon with both edge planes forming a stepped joining plane is conventionally known. This joining plane is formed in an L-shaped form on both edge portions of adjacent rectangular boards 21 by the short side edge plane and the side edge plane contacting this short side at right angles, with one side of the L-shaped edge plane having a tongue 23, and the other having a groove 24.

[0003]

Floor material thus configured is installed as a floor by fitting the tongue 23 and groove 24 portions formed in a step formation and sequentially adding onto a sub-floor, but the pieces of floor material installed at right angles as to the adding direction are installed in a state of the mutually parallel long sides being simply joined, so there is the problem that gaps and offsets occur between the side edge planes, and precise installation is difficult.

[0004]

Accordingly, the Inventor of the present Application and others have developed a floor material in Japanese Patent Application No. 4-317769 configured wherein, as shown

in the above drawings, a fitting groove 30 of a constant width is continuously provided opening upwards so as to form an outward edge wall below the side edge surface at one side edge plane of the both side edge planes of the above long sides into the form of a retaining protrusion 29, and a fitting protrusion portion 26 and a retaining groove 27 facing downwards to which the fitting groove 30 and retaining protrusion 29 can each fit, thereby preventing shifting between the pieces of floor material joined in the width direction, and inhibiting gaps and offsets.

[0005]

[Problems to be Solved by the Invention]

However, in the event that the fitting groove 30 having the retaining protrusion 29, and the fitting protrusion portion 26 and retaining groove 27 are formed to both side edges as described above, the joining of the floor material pieces is restricted only to the vertical connecting direction (the longitudinal direction of the rectangular boards 21). In this case, attempting to fit the tongue 23 of the next piece of floor material to the groove 24 of the floor material already laid with the tongue 23 tilted downwards, the lower plane of the groove portion 23a protruding at the long side comes into contact with the long side upper plane 24a to which the groove of the floor material already laid has been formed, at the tongue 23 of



the adjacent rectangular boards 21 and 21, so the floor material cannot be laid down in the horizontal direction [0006]

Accordingly, there was the problem that the fitting of the next piece of floor material to the floor material already laid on the sub-floor had to be performed by laying the next piece of floor material on top of the floor material already laid down and the sliding the floor material to fit the tongue-and-groove portions 23 and 24, so in the event of installing the floor in tight spaces such as near walls or in corners, securing space for this sliding was difficult, and ease of installation was poor. It is an object of the present invention to provide floor material capable of solving such problems.

[0007]

[Means for Solving the Problems] In order to achieve the above object, according to the floor material of the present invention, a main floor material piece comprises a plurality of rectangular boards integrally formed with the opposing side edge planes at the long sides thereof joined and with the adjacent boards being offset in a step formation in the longitudinal direction, wherein a fitting groove of a constant width is continuously provided opening upwards so as to form an outward edge wall below the side edge surface at one side edge plane of the both side edge planes of the

parallel long sides of the main floor material into the form of a retaining protrusion, and a fitting protrusion portion and a retaining groove facing downwards to which the fitting groove and retaining protrusion can each fit, and wherein a tongue is provided to one short side edge plane of the rectangular boards and a groove capable of fitting with the tongue is formed at the other short side edge plane, and wherein at one side edge portion of the long side of an adjacent rectangular board which is exposed by the stepped array, a corner portion connecting with at least the tongue portion at right angles is formed as a side edge plane to which the tongue is not provided.

[0008]

[Operation] In order to install the floor material with the above construction onto a sub-floor, the tongue of the floor material to be installed next is caused to face the groove of the already-installed floor material adhered to the sub-floor beforehand in a downwards-inclined attitude, and pressing the floor material against the floor material in that state causes the side edge plane of the floor material to be laid to come into sliding contact with the side edge plane provided continuously at right angles with the groove of the floor material already laid, since the side edge at the corner continuously connected at right angles with the tongue of the floor material to be laid is

formed as a flat side edge plane to which a tongue is not provided, and accordingly, the tip of the downwards-inclined tongue is in a state of having entered the opening edge of the groove of the already-laid floor material.

[0009]

From this state, the floor material to be laid is gradually laid down in the horizontal direction and is pressed into the already-laid floor material, whereby the tongue proceeds to fit into the groove, and in the state that the floor material is in complete contact with the sub-floor, the tongue is completely fit into the groove. These procedures are followed to sequentially join and install the floor material pieces in the length direction of the floor material, following the wall.

[0010]

Next, in order to sequentially join the floor material in the width direction thereof, the floor material to be laid is inclined downwards as to the fitting groove of the upwards opening having the retaining protrusion erected at the one side edge plane of the already-lain floor material, and the fitting protrusion portion of the floor material to be laid is fit into the above fitting groove, and from this state the floor material is gradually laid down, whereby the retaining groove of the downwards-facing opening formed at the lower plane of the other side edge portion is engaged

with the above retaining protrusion of the already-lain floor material. As a result of sequentially installing the floor material in the width direction following these procedures, the movement in the horizontal direction between the floor material pieces is restricted by the fitting of the retaining protrusion and retaining groove, thus doing away with occurrence of gaps.

[0011]

[Embodiments] Next, describing an embodiment of the present invention, reference numeral 1 denotes a rectangular board formed of plywood, particle board, MDF, or other like material, having a constant width and constant length, and a plurality of these boards 1 (four in the Figure) are joined by the opposing long side edge planes, and sequentially shifted in the length direction by a certain amount to form a step formation, and in this state the joined edge planes are integrally fixed using an appropriate adhesive agent, thereby forming main floor material pieces A arrayed en echelon on a plane.

[0012]

On both short side edge planes of each of the boards 1 making up the main floor material piece A, a tongue 2 is formed over generally the entire width at the center portion of one edge plane in the thickness direction, and a groove 3 to which the tongue 2 can be fit is formed over the entire

width at the center portion of the other edge plane in the thickness direction. Also, one side of the long side edge plane of the adjacent boards 1 and 1 exposed due to offsetting the boards 1 so as to make a stepped formation is formed into a smooth side edge plane 1a to which a tongue 2 is not provided, and at the long side portions of the boards 1 and 1 positioned on the outmost side in the formation of the main floor material piece A, a protrusion 4 continuously connected to the above tongue 2 at right angles is formed on one board 1 forming one side edge plane of the main floor material piece A over the entire length, and a groove 5 continuously connected to the above groove 3 at right angles is formed on the other board 1 forming the other side edge plane of the main floor material piece A over the entire length thereof. Further, the area between this groove 5 and the lower plane of the board 1 is formed into a fitting protrusion portion 6, and a retaining groove 7 opening downwards is provided at the center portion of the lower plane of the board 1 over the entire length thereof.

[0013]

Applied to the lower plane of the main floor material piece A is an elastic backing material 8 formed of rubber, and elastic resin sheet, etc., having a certain thickness. This elastic backing material 8 is applied to the bottom face of the main floor material piece A such that one edge

thereof is flush with the inner edge of the retaining groove 7, and the other edge is extended from the lower plane of the main floor material piece A by a predetermined width and a rod-shaped retaining protrusion 9 formed of an appropriate hard material such as wood or like material is fixed thereto. Then, a fitting groove 10 opening in the upwards direction is formed over the entire length between this retaining protrusion 9 and the other side edge plane of the main floor material piece A. The retaining protrusion 9 and the fitting groove 10 are each formed at positions to which the above retaining groove 7 and fitting protrusion 6 formed on the one side edge portion of the main floor material piece A can fit.

[0014]

Describing the installation procedures of the floor material thus configured onto the sub-floor B, first, as shown in Fig. 3 and Fig. 4, the tongue portion 2 side of the floor material to be installed next is inclined downwards and caused to face the groove 3 side of the floor material forming a stepped form and already laid down, and in this state, the material is abutted against the floor material, whereby the side edge plane 1a of the floor material to be laid can be slidably brought into contact with the long side other side edge plane of formed in a stepped formation on the floor material already laid, since the long side one

side edge plane formed in a stepped formation on the adjacent boards 1 and 1 is formed as a perpendicular side edge plane 1a to which the tongue 2 has not been formed, and accordingly, the tip of the tongue inclined downwards can be brought into a state of being abutted against the opening edge of the groove 3.

[0015]

From this state, the floor material to be installed is gradually laid down in the horizontal direction and pressed toward the floor material already laid down, whereby the tongue 2 proceeds to fit into the groove 3, such that the floor material is applied onto the sub-floor and is in a horizontal state, wherein as shown in Fig. 5, the tongue-and-groove 2 and 3 are completely fit one to another. Following such procedures, the floor material is sequentially joined and installed in the length direction along the wall edge on the sub-floor B. In this state, the fitting groove 10 having the retaining protrusion 9 protruding from the other side edge portion of the main floor material piece A is continuously connected in a linear form. Incidentally, the floor material can be fixed on the sub-floor simply by laying thereupon, but also may be fixed more firmly by using adhesive agents on the lower plane thereof, or by nailing.

[0016]

Next, in order to sequentially join the floor material in the width direction, as shown in Fig. 6, the floor material to be installed is inclined downwards toward the upward facing fitting groove 10 having the retaining protrusion 9 protruding from the one side edge portion of the floor material and the fitting protrusion 6 provided on the other side edge play is fit into the fitting groove 10, and from this state the floor material is gradually laid down and pressed in, whereby as shown in Fig. 7, the groove 5 of the floor material to be laid fits with the protrusion portion 4 of the floor material already laid, and the retaining groove 7 opening downwards that is formed at the other side edge at the lower side of the plane engages with the retaining protrusion 9, thereby allowing installation wherein shifting is prevented and gaps do not occur. Further, the fitting of the protrusion 4 and groove 5 restrict movement in the vertical direction, so there are no offsets, and in addition, small roughness on the surface of the sub-floor B is absorbed by the elastic backing 8 applied to the lower side of the main floor material pieces A, enabling a floor with a flat surface to be installed.

[0017]

Fig. 8 and Fig. 9 illustrate a variation of the main floor material pieces A, and though in the above embodiment, the rectangular boards 1 forming the main floor material



piece A were joined with an adhesive agent 11 and integrally formed, but with this variation, the opposing boards 1 and 1 are provided with a protrusion portion 14 and recession portion 15, and fitting the protrusion portion 14 with the recession portion 15 forms the main floor material piece A. Other configurations are the same as those in the above embodiment.

[0018]

Fig. 10 illustrates another embodiment of the floor material according to the present invention. Though in the above embodiment, a plurality of rectangular boards 1 are sequentially shifted in the length direction by a certain amount to form a step formation of the edges of the main floor material pieces A, but according to the present embodiment, a plurality of rectangular boards 1 having a constant width and constant length are sequentially shifted in differing length directions by desired amounts to form a battlement-like formation of the edges of the main floor material piece A. Other configurations and installation procedures are the same as those in the above embodiment.

[0019]

Also, though in the above embodiment, the one long side edge plane on the adjacent boards 1 and 1, i.e., the exposed side edge plane 1a contacting the tongue 2 at right angles is of a configuration wherein the tongue 2 has not been

formed thereupon at all over the entire length, but with an arrangement wherein the tongue 3 is done away with at the tip of the exposed side edge plane 1a at least, i.e., at the corner portion coming into contact with the tongue portion 2 at right angles, the above vertical connecting installation can be performed for fitting the neighboring tongue-and-groove 2 and 3 portions together for installation.

[0020]

For such a configuration, for example, as shown in Fig. 11, at the exposed side edge plane 1a connecting at right angles to the tongues 2 provided on the short sides of the neighboring rectangular boards 1 and 1, a portion of an appropriate length from the corner is formed as a perpendicular plane to which a tongue 3 is not provided, or, as shown in Fig. 13, the edge portion of the protrusion portion whereby the boards 1 and 1 are fit may be formed as an inclined edge portion 14a which gradually becomes narrower toward the corner.

[0021]

[Advantages] According to the floor material of the present invention thus described, a main floor material piece comprises a plurality of rectangular boards integrally formed with the opposing side edge planes at the long sides thereof joined and with the adjacent boards being offset in a step formation in the longitudinal direction, wherein a

tongue is provided to one short side edge plane of the rectangular boards and a groove capable of fitting with the tongue is formed at the other short side edge plane, and wherein at one side edge portion of the long side of an adjacent rectangular board which is exposed by the stepped array, a corner portion connecting with at least the tongue portion at right angles is formed as a side edge plane to which the tongue is not provided, so at the time of joining the floor material to be laid next to the floor material already laid, the floor material can be inclined downwards and in this state the tongue and the groove can be abutted, so lowering the floor material downwards from that state so as to be laid on the floor allows the floor material to be easily and precisely joined.

[0022]

Accordingly, there is no need to slide and move the floor material to be installed as to the already-lain floor material from a position distanced in the length direction as with the conventional technique, so installation can be easily made in tight spaces such as along walls or in corners, meaning that floor installation can be performed efficiently.

[0023]

Further, according to the floor material of the present invention, a fitting groove of a constant width is

continuously provided opening upwards so as to form an outward edge wall below the side edge surface at one side edge plane of the both side edge planes of the parallel long sides of the main floor material into the form of a retaining protrusion, and a fitting protrusion portion and a retaining groove facing downwards to which the fitting groove and retaining protrusion can each fit, so in the event of sequentially joining the floor material in the width direction, the floor material to be installed next is inclined downwards toward the fitting groove facing upwards having the retaining protrusion erected on one edge plane of the floor material already laid, and the fitting protrusion portion provided to the other side edge plane thereof is fit into the above fitting groove, and from this state the floor material is gradually laid down, whereby the downward facing retaining groove formed on the lower plane of the other side edge portion is easily engaged with the retaining protrusion of the floor material already laid, and the movement between the floor material pieces in the width direction is thus restrained, so gaps can be prevented from occurring, and floor installation can be precisely performed.

[Brief Description of the Drawings]

[Fig. 1] Fig. 1 is a plan view of the floor material according to the present invention.

[Fig. 2] Fig. 2 is an enlarged cross-sectional frontal view

thereof.

[Fig. 3] Fig. 3 is a plan view illustrating the state of longitudinal installation.

[Fig. 4] Fig. 4 is a cross-sectional side view thereof.

[Fig. 5] Fig. 5 is a plan view illustrating the joined state.

[Fig. 6] Fig. 6 is a simplified cross-sectional frontal diagram illustrating the state of width-wise installation.

[Fig. 7] Fig. 7 is a simplified cross-sectional frontal diagram illustrating the junction thereof.

[Fig. 8] Fig. 8 is a plan view illustrating a variation of the floor material.

[Fig. 9] Fig. 9 is a cross-sectional frontal diagram of line X-X therein.

[Fig. 10] Fig. 10 is a plan view illustrating another embodiment of the floor material.

[Fig. 11] Fig. 11 is a disassembled plan view illustrating yet another embodiment of the floor material.

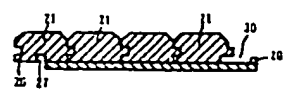
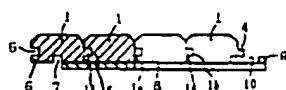
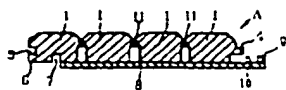
[Fig. 12] Fig. 12 is a disassembled plan view illustrating a variation thereof.

[Fig. 13] Fig. 13 is a plan view illustrating a conventional example.

[Fig. 14] Fig. 14 is a cross-sectional frontal diagram thereof.

[Reference Numerals].

- 1 | Board
- 1a | Side edge plane
- 2 | Tongue
- 3 | Groove
- 6 | Fitting protrusion portion
- 7 | Retaining groove
- 9 | Retaining protrusion
- 10 | Fitting groove



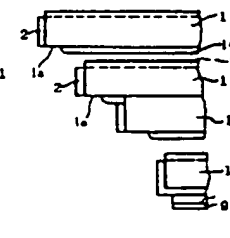
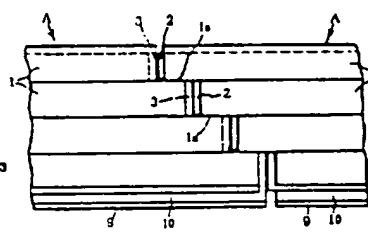
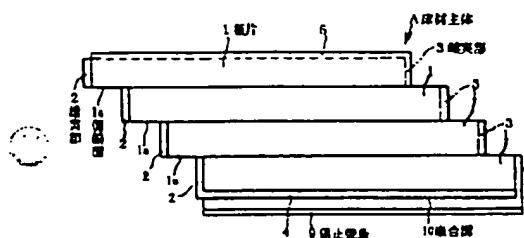
(5)

特開平 7-76923

【図 1】

【図 3】

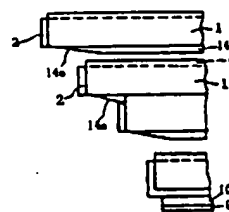
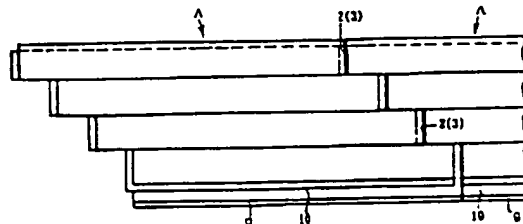
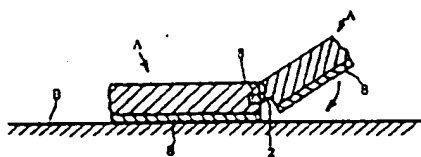
【図 11】



【図 4】

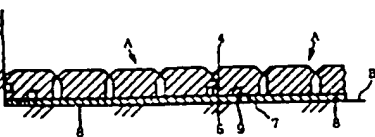
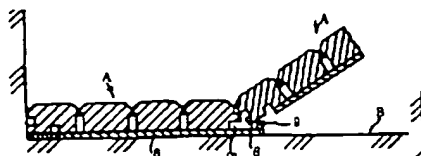
【図 5】

【図 12】



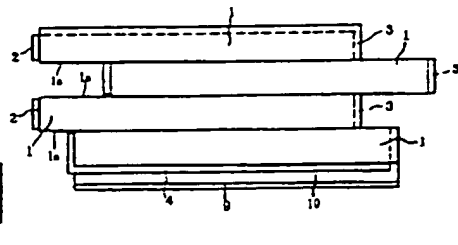
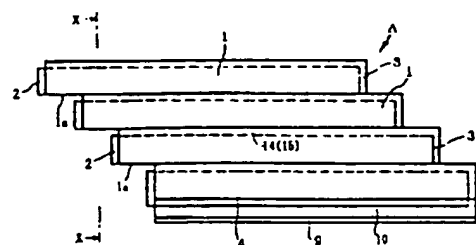
【図 6】

【図 7】



【図 8】

【図 10】



【図 13】





## PATENT ABSTRACTS OF JAPAN

(11)Publication number: 07076923

(43)Date of publication of application: 20.03.1995

(51)Int.Cl.

E04F 15/04

(21)Application number: 05186878

(71)Applicant:

DAIKEN TRADE &amp; IND CO LTD

(22)Date of filing: 29.06.1993

(72)Inventor:

AOKI HIDEKAZU

INOUE MINORU

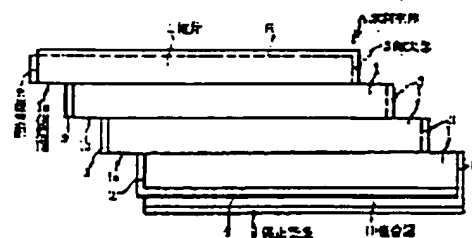
HAYASHI SHINJI

(54) FLOOR MEMBER

(57)Abstract:

**PURPOSE:** To facilitate a joint work for joining floor members together in a planar stagger formation having each end surface formed in a stepped shape, even in a narrow space.

**CONSTITUTION:** In a principal floor body A in which a plurality of rectangular planar members 1 are integrally joined with one another at their long sides, being longitudinally shifted from one another so that each end surface of the principal floor body A is formed in a stepped joint surface, a tongue 2 is formed only at one short side of each of the members 1 on one end side surface side, and a groove 3 is formed on the other end side and is adapted to be fitted therein with the tongue 2. During joining of the members 1 together, the tongue 2 of a rectangular planar member 1 to be joined at the next, is made to abut against the groove 3 of an existing planer member 1 in a downward obliquely condition, and







## PATENT ABSTRACTS OF JAPAN

(11)Publication number: 07076923

(43)Date of publication of application: 20.03.1995

(51)Int.Cl.

E04F 15/04

(21)Application number: 05186878

(71)Applicant:

DAIKEN TRADE &amp; IND CO LTD

(22)Date of filing: 29.06.1993

(72)Inventor:

AOKI HIDEKAZU

INOUE MINORU

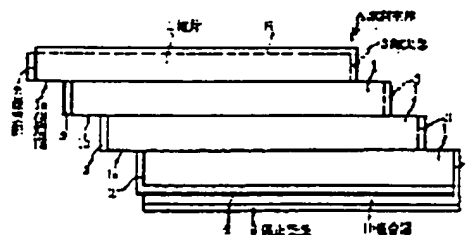
HAYASHI SHINJI

(54) FLOOR MEMBER

(57)Abstract:

**PURPOSE:** To facilitate a joint work for joining floor members together in a planar stagger formation having each end surface formed in a stepped shape, even in a narrow space.

**CONSTITUTION:** In a principal floor body A in which a plurality of rectangular planar members 1 are integrally joined with one another at their long sides, being longitudinally shifted from one another so that each end surface of the principal floor body A is formed in a stepped joint surface, a tongue 2 is formed only at one short side of each of the members 1 on one end side surface side, and a groove 3 is formed on the other end side and is adapted to be fitted therein with the tongue 2. During joining of the members 1 together, the tongue 2 of a rectangular planar member 1 to be joined at the next, is made to abut against the groove 3 of an existing planer member 1 in a downward obliquely condition, and



thereafter, to set on a heel edge so as to fit the tongue 2 and the groove 3 together.

---

## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

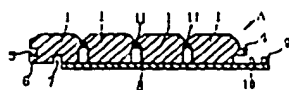
[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]



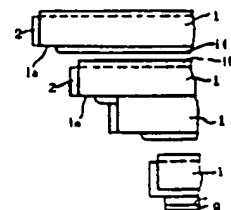
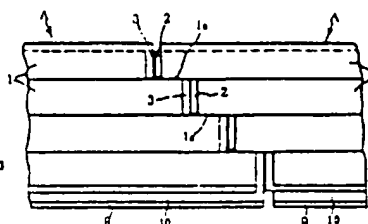
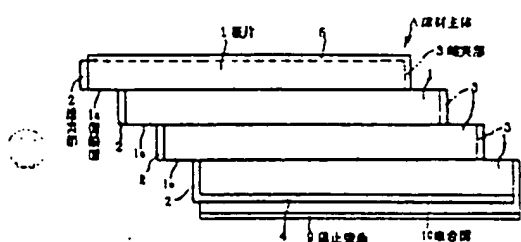
(5)

特開平 7-76923

【図 1】

【図 3】

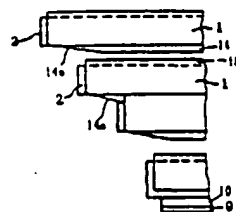
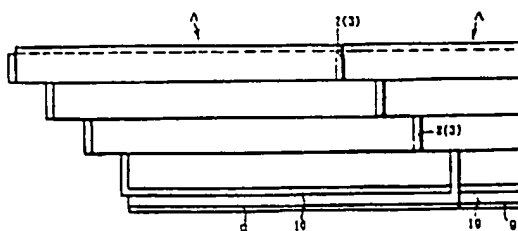
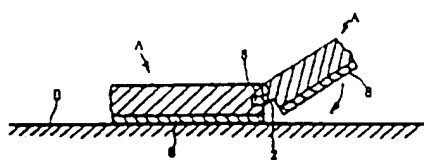
【図 11】



【図 4】

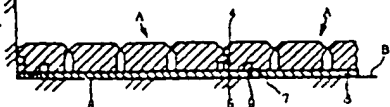
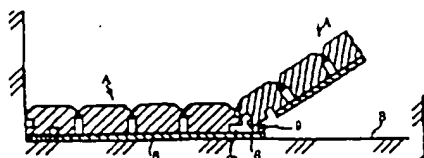
【図 5】

【図 12】



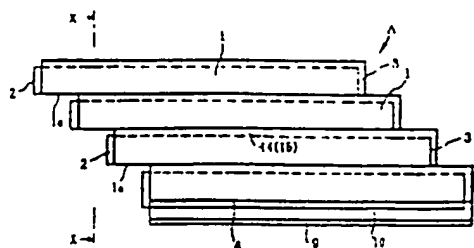
【図 6】

【図 7】

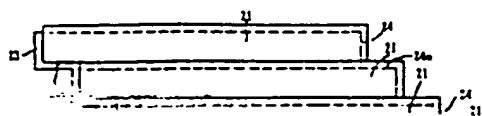


【図 8】

【図 10】



【図 13】



## 【特許請求の範囲】

【請求項1】 床材主体は長方形の板片を複数枚、対向する長辺側の側端面同士を接合させると共に隣接する板片を長さ方向に段状にずらした状態で一体化してなる形状を有し、この床材主体の平行な長辺側の両側端面における一方の側端面下端部に外端壁に係止突条に形成している一定幅の上向き開口の嵌合溝を連設すると共に他方の側端面側に上記嵌合溝に係止突条とが夫々嵌合可能な嵌合突縁部と下向き開口の係止溝とを設け、さらに、上記各長方形板片における一方の短辺側端面に雄実部を、他方の短辺側端面に該雄実部が嵌入可能な雌実部を形成すると共に、段状にずらしたことによって露出した隣接する長方形板片の長辺一側端面において、少なくとも上記雄実部と直角に接続する角部を雄実部が設けられていない側端面に形成していることを特徴とする床材。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】本発明は両端面が段状に形成されている床材の改良に関するものである。

## 【0002】

【従来の技術】従来から、図13、図14に示すように、複数枚の長方形板片21を雁行状に組み合わせて両端面を階段状の接合端面に形成してなる床材が知られている。この接合端面は、隣接する長方形板片21、21の両端部に各板片21の短辺側端面と該短辺に直角に接続する側端面とによってし字状に形成されており、そのし字状端面の一方に雄実部23を、他方に雌実部24を形成してなる構造を有している。

【0003】このように構成した床材は、階段状に形成された雄実部23と雌実部24とを嵌合させながら床下地材上に順次継ぎ足して床施工されるものであるが、その継ぎ足し方向に対して直角方向に施工される床材同士は、互いに平行な長辺側の側端面を単に接合させた状態で施工されるので、これらの側端面間に目隙や段差が生じて精度のよい施工が困難であるという問題点が生じる。

【0004】このため本願発明者等は、特願平4-317769号において、上記図に示すように、上記長辺側の両側端面における一方の側端面下端部に外端壁を上向き係止突条29に形成している一定幅の上向き開口の嵌合溝30を連設すると共に他方の側端面側に上記嵌合溝30と係止突条29とが夫々嵌合可能な嵌合突縁部26と下向き開口の係止溝27とを設けて幅方向に接合する床材同士間にズレの発生を防止し、目隙や段差を生じさせないように構成した床材を開発した。

## 【0005】

【発明が解決しようとする課題】しかしながら、上記のように両側端縁に係止突条29を有する嵌合溝30と嵌合突縁部26および係止溝27を形成すると、床材同士の接合は縦継ぎ方向（長方形板片21の長さ方向）のみに制限され

ることになる。この場合、既に施工した床材の雌実部24に対して次の床材の雄実部23を斜め下方に向けた状態で嵌め込み作業を行おうとすると、隣接する長方形板片21、21の雄実部23において、長辺部に突設している雄実部23aの下面が既に施工している床材の雌実部を形成した長辺部上面24aに当接して床材を水平方向に伏動させることができなくなる。

【0006】そのため、既に施工した床材に対して、次の床材を床下地材上に長さ方向に離間させた状態で載置し、しかるのち、該床材をスライドさせることにより雌雄実部23、24の嵌合作業を行わなければならない。壁際部や隅角部などの狭いところに床施工する際には、そのスライド可能な空間を確保することが困難で、施工性が悪いという問題点があった。本発明はこのような問題点を解消し得る床材の提供を目的とするものである。

## 【0007】

【課題を解決するための手段】上記目的を達成するため、本発明の床材は、長方形の板片を複数枚、対向する長辺側の側端面同士を接合させると共に隣接する板片を長さ方向に段状にずらした状態で一体化してなる形状の床材主体を形成し、この床材主体の平行な長辺側の両側端面における一方の側端面下端部に外端壁に係止突条に形成している一定幅の上向き開口の嵌合溝を連設すると共に他方の側端面側に上記嵌合溝に係止突条とが夫々嵌合可能な嵌合突縁部と下向き開口の係止溝とを設け、さらに、上記各長方形板片における一方の短辺側端面に雄実部を、他方の短辺側端面に該雄実部が嵌入可能な雌実部を形成すると共に、段状にずらしたことによって露出した隣接する長方形板片の長辺一側端面において、少なくとも上記雄実部と直角に接続する角部を雄実部が設けられていない側端面に形成してなる構造を有している。

## 【0008】

【作用】上記構造を有する床材を床下地材上に敷設施工するには、先に床下地材上に貼着した既設床材の雌実部側に対して次に施工する床材の雄実部を斜め下方に向けた状態で対向させ、その状態で該床材を既設床材に突き合わせるようにすると、施工すべき床材は、その雄実部と直角に接続する角部の側縁が雄実部を設けていない平坦な側端面に形成されているので、その側端面を既設の床材の雌実部と直角に接続した側端面に摺接させることができ、従って、下向きに傾斜した雄実部の先端が既設の床材の雌実部の開口端に侵入した状態となる。

【0009】この状態から施工すべき床材を徐々に水平方向に伏動させながら既設床材側に押し進めると、雄実部が雌実部内に嵌入していき、該床材が床下地材上に密接させた状態になると雄実部が雌実部内に完全に嵌合した状態となる。このような手順によって床下地材の壁際部に沿って床材を長さ方向に順次接合、施工する。

【0010】次に、床材をその幅方向に順次接合させる

3

には、既設床材の一側端面に突設している係止突条を有する上向き開口の嵌合溝に対して施工すべき床材を斜め下方に傾斜させた状態にしてその他側端面側に設けている嵌合突縁部を上記嵌合溝に嵌め込み、この状態から該床材を徐々に伏動させることによってその他側端面下面に形成している下向き開口の係止溝を既設床材の上記係止突条に係合させるものである。この手順によって床材を幅方向に順次施工すると、係止突条と係止溝との嵌合によって床材間の幅方向の移動が拘束され、目隙の発生をなくすることができる。

【0011】

【実施例】次に、本発明の実施例を説明すると、1は合板、パーティクルボード、MDF等の材料から形成された一定幅と一定長さを有する長形状の板片で、この板片1を複数枚(図においては4枚)、対向する長辺側の側端面同士を接合させると共に長さ方向に所望寸法だけ順次階段状ずらした状態にして適宜な接着剤11により接合側端面間を一体的に固着し、平面雁行形状の床材主体Aを形成してある。

【0012】この床材主体Aを形成した各板片1における短辺側両端面において、一方の端面の厚さ方向の中央部には略全幅に亘って雄実部2が形成されており、他方の端面の厚さ方向の中央部には該雄実部2が嵌合可能な雌実部3が全幅に亘って形成されてある。また、階段状にずらしたことによって露出した隣接する板片1、1の長辺縁一側端面は、雄実部2が設けられていない平滑な側端面1aに形成していると共に床材主体Aを形成した最外側方に配設されている板片1、1の長辺部において、床材主体Aの一側端面を形成する一方の板片1に上記雄実部2と直角に接続した突条部4を全長に亘って形成してあり、床材主体Aの他側端面を形成する他方の板片1に上記雌実部3と直角に接続した凹溝5を全長に亘って形成してある。さらに該凹溝5とこの板片1の下面間を嵌合突縁部6に形成していると共に該板片1の下面中央部に下向き開口の係止溝7を全長に亘って刻設してある。

【0013】床材主体Aの下面には、一定厚みを有するゴム、弾性樹脂シート等よりなる弾性下貼材8が貼着されている。この下貼材8はその一側端部を床材主体A下面における上記係止溝7の内端縁に合わせて貼着しており、他側端部を床材主体Aの下面から一定幅延出させてその端縁上面に木質材その他の適宜な硬質材料よりなる棒状の係止突条9を固着してある。そして、この係止突条9と床材主体Aの他側端面との間には該係止突条9を外端壁とする上向き開口の嵌合溝10を全長に亘って形成してある。これらの係止突条9及び嵌合溝10は、床材主体Aの一側端部に形成している上記係止溝7と嵌合突縁部6とに夫々嵌合可能な位置に形成されているものである。

【0014】このように構成した床材を床下地材B上に

4

施工する手順を述べると、まず、図3、図4に示すように、先に貼着施工した既設床材の階段状に形成している雄実部3側に対して次に施工する床材の雄実部2側を斜め下方に向けた状態に対向させ、その状態で該床材を既設床材に突き合わせると、施工すべき床材は、隣接する板片1、1によって階段状に形成している長辺側一側端面が雄実部2を形成していない垂直な側端面1aに形成されているので、該側端面1aを既設床材の階段状に形成している長辺側他側端面に摺接状態に沿わせることができ、従って、下向きに傾斜した雄実部2の先端を既設の床材の雌実部3の開口端に突き当てた状態とし得る。

【0015】この状態から施工すべき床材を徐々に水平方向に伏動させながら既設床材側に押し進めると、雄実部2が雌実部3内に嵌入していき、該床材が床下地材上に貼着されて水平状態になると図5に示すように、雌雄実部2、3同士が完全に嵌合した状態となる。このような手順によって床下地材Bの壁際部に沿って床材を長さ方向に順次接合、施工する。この状態においては、床材主体Aの他側端部から突出している係止突条9を有する嵌合溝10は長さ方向に一直線状に連設する。なお、床下地材B上に対する床材は載置するだけで固定されるが、該床材の下面を適宜な接着剤や釘着によってより強固に固定してもよい。

【0016】次に、床材をその幅方向に順次接合させるには、図6に示すように、既設床材の一側端面に突設している係止突条9を有する上向き開口の嵌合溝10に対して施工すべき床材を斜め下方に傾斜させた状態にしてその他側端面側に設けている嵌合突縁部6を上記嵌合溝10に嵌め込み、この状態から該床材を徐々に伏動させながら押し込めば、図7に示すように、既設床材の突条部4に施工すべき床材の凹溝5が嵌入すると共にその他側端面下面に形成している下向き開口の係止溝7が係止突条9に係合して幅方向に対するズレを防止した状態で且つ目隙が生じることなく施工し得るものである。さらに、突条部4と凹溝5との嵌合によって上下方向への変動が規制されて段差が生じなく、その上、床材主体Aの下面に貼着している弾性下貼材8によって床下地材Bの表面の微小な凹凸部が吸収され、表面が平坦な床材施工が可能となる。

【0017】図8、図9は床材主体Aの変形例を示すもので、上記実施例においては、床材主体Aを構成する長形状の板片1を互いに接着剤11によって接合一体化しているが、この変形例においては、対向する板片1、1の長辺側端面に互いに嵌合可能な突条部14と凹溝部15とを形成しておき、これらの突条部14と凹溝部15とを嵌合させることによって床材主体Aを形成しているものである。その他の構造については上記実施例と同様である。

【0018】図10は、本発明床材の別な実施例を示すもので、上記実施例においては、複数枚の長形状の板片1、1・・・を順次、同一長さ方向にずらして床材主体

5

Aの両側端面を階段状に形成しているが、この実施例においては、一定幅と一定長さを有する複数枚の長方形状板片1、1・・・を異なる長さ方向に所望寸法だけずらせて両端面を凹凸段状に形成しているものである。その他の構造及び施工方法については上記実施例と同様である。

【0019】また、上記各実施例においては、隣接する板片1、1の長辺側一端部、即ち、短辺側に設けた雄実部2と直角に接続する露出側端面1aにはその全長に亘って全く雄実部2が形成されていない構造を示したが、施工時に隣接する床材の雄雄実部2、3同士を嵌合させる際に、少なくとも露出側端面1aの先端部、つまり、雄実部2と直角に接続する角部に雄実部3をなくした形状にしておけば、上記のような縦継ぎ施工が可能となるものである。

【0020】このような構造としては、例えば、図11に示すように、隣接する長方形状板片1、1の短辺側に設けた雄実部2と直角に接続する露出側端面1aにおいて、角部から適宜な長さ部分だけを雄実部3が設けられていない垂直な面に形成しておくか、或いは、図12に示すように、板片1、1同士を嵌合させる突条部14の端部を角部に向かって徐々に幅狭くなる傾斜端部14aに形成しておけばよい。

【0021】

【発明の効果】以上のように本発明の床材によれば、長方形状の板片を複数枚、対向する長辺側の側端面同士を接合させると共に隣接する板片を長さ方向に段状にずらした状態で一体化してなる形状の床材主体を形成し、各長方形状板片における一方の短辺側端面に雄実部を、他方の短辺側端面に該雄実部が嵌入可能な雌実部を形成すると共に、段状にずらしたことによって露出した隣接する長方形状板片の長辺側一端部において、少なくとも上記雄実部と直角に接続する角部を雄実部が設けられていない側端面に形成しているので、既に施工した床材に次に施工すべき床材を接合させる際に、該床材を斜め下方に向けた状態にして雄雄実部同士を突き合わせることができ、その状態から該床材を下方に伏動させながら床下地材上に載置することによって既設床材に簡単且つ正確に接合させることができるものである。

【0022】従って、従来のように既設床材に対して次に施工すべき床材を長さ方向に離間させた状態で床下地材上に載置したのち、スライド移動させる必要はなく、壁際部や隅角部のような狭い空間部においても容易に施

6

工でき、床施工が能率よく行えるものである。

【0023】さらに、本発明の床材においては、床材主体の平行な長辺側の両側端面における一方の側端面下部に外端壁を係止突条に形成している一定幅の上向き開口の嵌合溝を連設すると共に他方の側端面側に上記嵌合溝と係止突条とが夫々嵌合可能な嵌合突縁部と下向き開口の係止溝とを設けているので、床材を幅方向に順次接合させる場合、既設の床材の側端面に突設している係止突条を有する上向き開口の嵌合溝に対して次に施工すべき床材を斜め下方に傾斜させた状態にしてその他側端面側に設けている嵌合突縁部を上記嵌合溝に嵌め込み、この状態から該床材を徐々に伏動させることによってその他側端面下部に形成している下向き開口の係止溝を既設床材の上記係止突条に簡単に係合させることができ、これらの係合によって床材間の幅方向の移動が拘束されて目隙の発生をなくすることができ、精度のよい床施工が可能となるものである。

【図面の簡単な説明】

【図1】本発明床材の平面図、

【図2】その拡大縦断正面図、

【図3】縦継施工状態を示す平面図、

【図4】その縦断側面図、

【図5】接合した状態を示す平面図、

【図6】横継施工状態を示す簡略縦断正面図、

【図7】その接合状態を示す簡略縦断正面図、

【図8】床材の変形例を示す平面図、

【図9】そのX-X線における縦断正面図、

【図10】床材の別な実施例を示す平面図、

【図11】さらに別な実施例を示す分解平面図、

【図12】その変形例を示す分解平面図、

【図13】従来例を示す平面図、

【図14】その縦断正面図。

【符号の説明】

A 床材主体

1 板片

1a 側端面

2 雄実部

3 雌実部

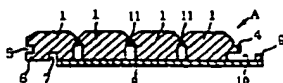
6 嵌合突縁部

7 係止溝

9 係止突条

10 嵌合溝

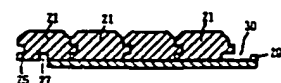
【図2】



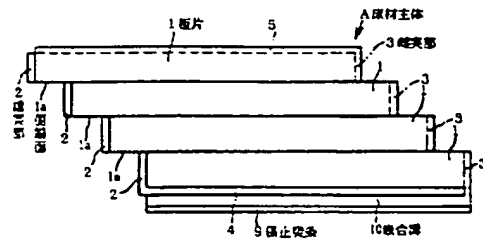
【図9】



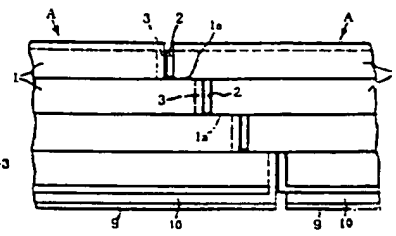
【図14】



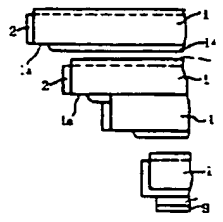
【図1】



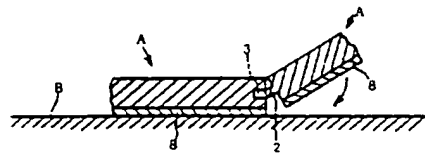
【図3】



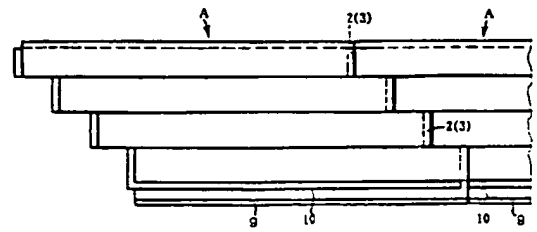
【図11】



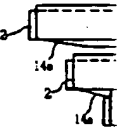
【図4】



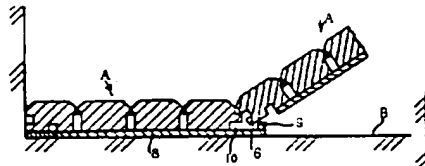
【図5】



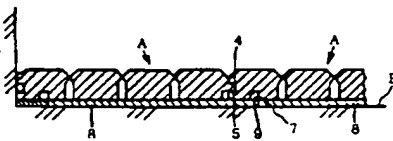
【図】



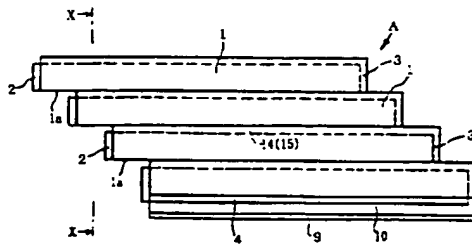
【図6】



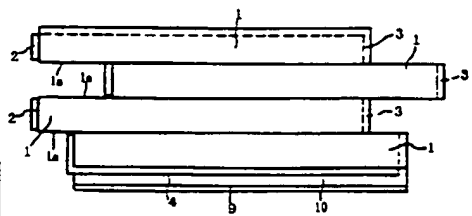
【図7】



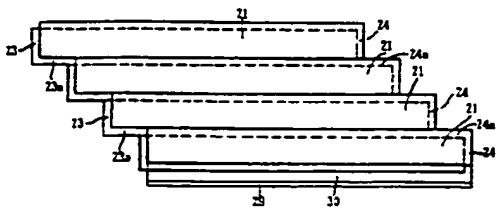
【図8】



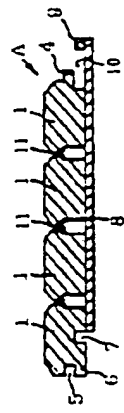
【図10】



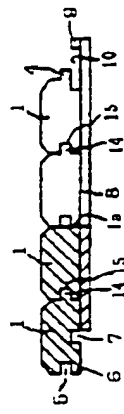
【図13】



【図2】



【図9】



【図14】

